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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,776	10/10/2000	Makoto Harada	198156US-2S CONT	3405

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EXAMINER

WILLS, MONIQUE M

ART UNIT

PAPER NUMBER

1746

DATE MAILED: 07/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/684,776

Applicant(s)

HARADA ET AL.

Examiner

Wills M Monique

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 12-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 October 2000 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Claims 12-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected fuel cell power generating system, there being no allowable generic or linking claim. Election was made **with** traverse in Paper No. 7.

Applicants contend that the restriction is improper because the groups impose no undue burden on the examiner. This argument is not persuasive. These inventions are distinct and have separate classification. Group I is classified in class 454 and group II is classified in class 429. This shows that each distinct subject has attained recognition in the art as a separate subject for inventive effort, and also a separate field of search. See MPEP 808.02.

Applicant also asserts that the combination/subcombination relationship of the groups, reduces the burden of searching because it is possible that patents/publications directed to the combination will also have a description of the subcombination, and vice versa. This argument is not persuasive. The combination of group II drawn to a fuel cell power generating system will not necessarily include the carbon monoxide transforming apparatus. Fuel cells do not typically require separate carbon monoxide transforming apparatuses, reformers and other functionally equivalent reactors may be used to reduce carbon monoxide emissions. Further the transforming apparatus itself has a plethora of uses, including air exchange system for buildings, and

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patents/publications teaching said device may not teach any device remotely related to fuel cell power generating systems.

Information Disclosure Statement

The information disclosure statement(s) filed October 10, 2000 and April 10, 2001 has/have been received and complies with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609.

Priority

Japanese foreign priority document(s) 11-032454, filed February 10, 1999 and submitted under 35 U.S.C. 119(a)-(d), has/have been received and placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1,2 & 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Horiuchi et al. U.S. Patent 5,911,961.

Horiuchi teaches a reaction vessel having gas inlet and outlet ports (col. 12, lines 55-68) and a catalyst of platinum and/or palladium with zinc, iron or titanium oxide carrier (Table 1). The carriers inherently have base points on their respective surfaces.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6 are rejected under 35 U.S.C. 102(e) as being anticipated by Iizuka et al. U.S. Patent 6,045,764.

Iizuka teaches a reaction vessel having inlet and outlet ports (Fig. 5a) and a catalyst comprising platinum and lanthanum or cerium on a titanium oxide support (col. 2, lines 60-68 & col. 3, lines 1-6). The carrier inherently has a base point on its surface. The platinum is supplied in an amount of 0.01 to 3.7 % by weight and cerium or lanthanum is supplied in an amount of 0.01 to 36 % by weight. See column 3, lines 5-15.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Iisuka et al. U.S. Patent 6,045,764 as applied to claim 1 above, and further in view of Horiuchi et al. U.S. Patent 5,911,961.

Iisuka teaches an exhaust gas purifying method employing a catalyst comprising platinum and/or palladium on a titanium oxide support. The platinum is supplied in an amount of 0.01 to 3.7 % by weight and cerium or lanthanum is supplied in an amount of 0.01 to 36 % by weight. See column 3, lines 5-15.

The reference is silent to an iron oxide support.

However, Horiuchi teaches the functional equivalence of titanium and iron as oxide carriers for platinum/palladium catalysts (Table 1).

Iisuka and Horiuchi are properly combinable art because they are from the same field of endeavor namely, fabricating catalyst to treat carbon monoxide emissions in engine exhaust.

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Therefore, because these oxide carriers were art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute iron for titanium as an oxide carrier of Iisuka.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over, Iisuka et al. U.S. Patent 6,045,764 as applied to claim 1 above, and further in view of Tabatabaie-Raissi et al. U.S. Patent 6,334,936.

Iisuka teaches an exhaust gas purifying method employing a catalyst comprising platinum and/or palladium on a titanium oxide support. The catalyst is employed in a reaction vessel comprising a plurality of gas-permeating plates in plural sections between the inlet and outlet (Fig. 5a).

The reference is silent to a cooling coil and an alternating arrangement of the cooling coil and catalyst.

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However, Tabatabaie-Raissi teaches that it is conventional to employ cooling coils in similar catalytic reactions to improve the mass transfer characteristics of the catalytic reactor (column 6, lines 20-45).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ a cooling coil in isuka in order to improve the mass transfer characteristics of the catalytic reactor.

Regarding alternating arrangements of the cooling coil and catalyst, it would have been obvious to employ multiple alternating cooling coils and catalysts, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Conclusions

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Monique Wills whose telephone number is (703) 305-0073. The Examiner can normally be reached on Monday-Friday from 8:30am to 5:00 pm.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

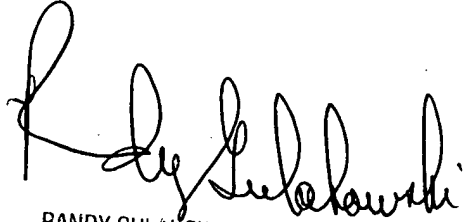
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If attempts to reach Examiner by telephone are unsuccessful, the Examiner's supervisor, Randy Gulakowski, may be reached at 703-308-4333.

The unofficial fax number is (703) 305-3599. The Official fax number for non-final amendments is 703-872-9310. The Official fax number for after final amendments is 703-872-9311.

Mw

07/09/03



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